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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/199,816	11/25/1998	MASATO SHIMADA	Q52241	4106

7590

04/01/2002

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EXAMINER

DICKENS, CHARLENE

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 04/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/199,816

Applicant(s)

Shimada et al.

Examiner

Dickens

Group Art Unit

2855

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on 1-10-02

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1-66 is/are pending in the application.

Of the above claim(s) 56-63 is/are withdrawn from consideration.

☐ Claim(s) is/are allowed.

☒ Claim(s) 1-55, 64-66 is/are rejected.

☐ Claim(s) is/are objected to.

☐ Claim(s) are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The drawing(s) filed on 3/5/01 is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

1. The applicants are strongly advised to use the proper symbols for the illustrated elements, i.e., a piezoelectric element is not metal but shaded as such, in accordance with MPEP. 608.02.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-55 and 64-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Badesha et al. in view of Roy et al.

Badesha et al. suggest in an ink jet recording head the improvement comprising: at least one of the group consisting of a diaphragm (col. 11, lines 7-61) and an acoustic heating driver element 34, includes a compression film having a compressive stress; and pressure chamber 20. Badesha et al. disclose an acoustic piezoelectric driver element can be used but the driver is not of suitable size and thus would prevent close spacing of the nozzles. Roy et al. disclose an acoustic piezoelectric driver can be of any suitable size and shape (col. 1, lines 30-35) and can be successfully used in drop on demand ink jet print head instead of an acoustic heating driver element (col. 1, lines 36-40) for the purpose of employing a geometry that permits

multiple nozzles to be positioned in a densely packed array with each nozzle being driven by an associated acoustic driver.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have an acoustic piezoelectric driver instead of an acoustic heating driver in Badesha et al. for the purpose of employing a geometry that permits multiple nozzles to be positioned in a densely packed array with each nozzle being driven by an associated acoustic driver.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kutami et al. disclose the use of piezoelectric and heating driver elements in a drop on demand print head.


5. To the argument filed 1/10/02 that all materials do not have a compressive stress, the Examiner still asserts the applicants have not presented any *evidence*, i.e. 37 CFR 1.132, that the materials used by prior art do not have a compressive stress as compared to the materials used by the applicants. All applicants' other arguments filed 01/10/02 have been fully considered and are deemed to be answered by the new rejection given above.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Dickens whose telephone number is (703) 305-7047. Any inquiry of

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Art Unit: 2855

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a general nature or relating to the status of this application should be directed to the receptionist or the customer service representative whose telephone numbers are (703) 308-0956 or (703) 308-4800 respectively. The fax numbers are (703) 305-3431 and (703) 305-3432.


cd/dickens
March 23, 2002

Benjamin R. Fuller
Supervisory Patent Examiner
Technology Center 2800

